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STUDY ON THE HARMONIZATION AND CO-ORDINATION OF THE VARIOUS TRANSPORT MODES IN THE CENTRAL AFRICAN SUBREGION

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I. Background

1. The ECA Conference of African Ministers of Transport, Communications and Planning through its resolution ECA/UNTACDA/Res.83/23 of 11/3/83 adopted in Cairo, Egypt *inter alia* requested the Economic Commission for Africa to carry out a study on the harmonization and co-ordination of the various transport modes in the entire African region.

2. In compliance with the resolution, draft terms of reference were prepared, covering all the transport modes that play a significant role in intra-regional transport, as well as transport economics. The studies were to be carried out at subregional basis and then consolidated to constitute the regional coverage. The four subregions selected for the study were based on the ECA definition i e. West, North, Central and Eastern/Southern.

3. The immediate objective of these study is to provide a basis for the development of the various transport modes in Africa on a harmonized, co-ordinated and integrated basis, while the long-term objective is to establish a rational integrated transport system in Africa, which adequately responds to existing and future transport demand, promotes development and expansion of intra-African trade and contributes to the physical, social and economic integration of the region.

4. This is a consolidated report which covers all the transport modes and provides a general subregional perspective of the transport system in the Central African subregion.

5. The report is largely based on basic information contained in the various modal reports (roads and road transport, railways, air transport, maritime/ports) prepared by various experts for the subregion.

6. The information contained in some of the modal reports does not include conditions and capacities of existing infrastructure, equipment and facilities; traffic volumes, direction and composition of traffic flows, forecast future capacities and traffic and modal transport costs and charges.

7. As a result, a detailed economic analysis of the traffic, costs/charges capacity and operational elements, on a subregional basis has not been possible in this report. Thus, the analysis in this report while only rudimentary, does show the magnitude of transport problems in the subregion and also indicate the possible approaches to their eventual solutions.

8. However, a broad review of the immediate past and present general economic condition and performance in the subregion has enabled some general conclusions to be made.

(i) General Socio-Economic Background

9. The Central African Subregion consists of eight countries Cameroon, CAR, Chad, Congo, Equatorial Guinea, Gabon, Sao Tome and Principe and Zaire. Most of the countries are situated in the most difficult topographic area of Africa

tropical rain forest and swamps. The total surface area of the subregion is about 5.4 million km^2 and the total population is about 51.8 million.

10. The population densities for countries in the subregion from a low of 3.7 (for Chad) to a high of 900 (for Sao Tome and Principe) people per km^2. A closer examination of the data shows that only Cameroon, Equatorial Guinea and Zaire have densities ranging from 13.3 to 19.4 people per km^2, while the rest of the countries have between 3.7 and five people per km^2. The overall subregional density is only 9.6 people per km^2. In comparative terms, the subregion is extremely sparsely populated.

11. With the exception of Zaire (31.2 million population) and Cameroon (9.2 million), the rest of the countries have very small populations (Equatorial Guinea 0.4, Chad 4.6, Congo 1.7, CAR 2.5, Gabon 1.1 and Sao Tome and Principe 0.9 million people).

12. The average annual population growth rates in all countries of the surbegion are above 2% and Zaire is over 3%.

13. The GDP per capita of the countries for 1986 was US$2,850 for Gabon, US$1,134 Congo, US$1,034 Cameroon, while the other countries ranged from a low of US$122 for Equatorial Guinea to US$335 for CAR with the rest of the countries in between.

14. Economic performance, measured in GNP per capita growth rates in the subregion has been generally poor between 1980 and 1986. With little exception, there has been a decline and the few cases of positive growth have been insignificant or involved reductions in negative growth rates (e.g. CAR 0.8 to 1.2% and Sao Tome, Principe -16 to -8.5% and Chad -11 to -2.5%). The GDP per capita growth rates for the countries declined as follows: Cameroon 11.8 to 2.5%, Congo 16 to -11%, Gabon -5.4 to -8.6% and Zaire was stagnant at -4.8% upto 1983.

15. Given the population high growth rate in the subregion and declining per capita incomes, there is no doubt that transport demand has also been declining and existing infrastructure/facilities have not been adequately maintained, and new investments in the transport sector have either been reduced or completely postponed.

16. The poor economic performance of the subregion over the past years can be directly linked to the general economic decline in the industrialized economies and to the lower prices of the subregion's primary export commodities. Future growth prospects are therefore also linked to growth of the world economy and better prices for exports.

II. Overview of the Transport Sector

17. Transport is a primary and an important service in support of trade and other inter-active activities. Within the Central African subregion, trade among the member States is governed by the UDEAC and ECCAS treaties, which provide for a customs union and an economic cooperation community.

Both treaties imply cooperation in the transport field, but the specific modalities of such cooperation or harmonization have not been clearly established and implemented.

18. Indeed there is substantial transit traffic between a few coastal and landlocked States and a small volume of traffic between some member States. However, the general evidence is that such movements are largely governed by bilateral rather than by subregional treaties.

19. A brief review of some important transport modes in the subregion follows below.

(i) Air Transport

20. Between 1980 and 1984 this mode registered annual traffic increases of 9.3% for passengers and 2% for freight, with passengers reaching 6 million and freight 270,062 tons.

21. Four airports - Douala, Libreville, Kinshasa and Kigali obtained 50% of their traffic from intra-subregional passengers and handled most of the freight while the majority of the airports had outward-bound uni-directional traffic.

22. The route network in the subregion is undeveloped as evidenced by the fact that only 52 (i.e. 47%) of 110 possible city-pairs are operational and only 8 of the -52 provide regular and satisfactory services of some 180 bilateral agreements only 27% are among airlines in the subregion and 36% of them have not been implemented.

23. Cooperation among airlines in the subregion and with other African airlines remains poor, since it only involves assistance in stop-overs and general representation and does not extend to operations and traffic services. While some efforts have been made to improve infrastructure and navigation, a large number of the personnel are still expatriates, subregional training is inadequate and deficient in many aspects and management is generally poor.

24. There is a general lack of harmonization and coordination in policy, operations and other related activities at both the national and subregional levels.

25. Recommendations for the short- and long-term development of air transport in the subregion which should be implemented by the airlines and member States include but are not limited to the following areas activities:

- harmonization of aeronautic legislation and regulations, practices and procedures;

- improvement and standardization of training within the subregion through effective use of the multinational centre at Mvengue, Gabon;

- the establishment of autonomous airport authorities;
- the full implementation of existing/future bilateral agreements;
- the establishment/facilitation of procedure for the repatriation of airline revenues;
- the standardization of air navigation equipment; and
- the conclusion pool agreements relating to technical, operations, marketing and purchase of aircrafts, equipment and spares.

26. Some specific recommendations have been made regarding improvement of services in the Northern, Eastern, Western and Southern sectors of the subregion.

(ii) Railways

27. The four independent railways in the subregion (Congo-ocean (CFCO), Cameroon National Railways (RNCF/REGIFERCAM), Zaire Railways (SNCZ and CFMK), and Transgabonese Railways (OCTRA) are not interconnected and are of different gauges. They are all modern railways some of which have undergone recent modifications while others are still being improved. In general, railways play a major role in the subregion, not only to the countries in which they are located but also to the landlocked CAR and Chad.

28. The 515 km Congo-Ocean Railways which provides a partial vital link between Congo and Chad is in fairly good conditions and its rolling stock comprise 47 track locomotives, 20 shunting engines, 90 passenger coaches and about 1150 assorted wagons.

29. The Cameroon Railways has two lines, one from Douala to Nkongsamba (172 km) and the other from Douala to Ngaoundere. The former is an outdated line with only limited operations while the latter (884 km) is modern and has been realigned between Douala and Maloume and rehabilitated in various sections.

30. Its rolling stock comprise of 116 locomotives, power trolleys and railcars; 109 passenger coaches; and 1794 wagons. Annual traffic is about 2.2 million passengers and 1.9 million tons of goods.

31. Zaire's railways is made up of SNCZ (5280 km) and CFMK (366 km) and its 1067 mm gauge could facilitate inter-connection with Zambia and Angola with similar gauges. While most of the infrastructure is worn out, some sections have been rehabilitated beginning in 1983.

32. The rolling stock consists of 284 locomotives, 423 passenger coaches and 8345 freight wagons. Most of the equipment is relatively old and needs frequent maintenance.

33. Annual traffic amounts to about 5.6 million tons and only 0.4 million passengers, the latter mainly on the CFMK network.

34. The 635 km Transgabonese railway consists of two main sections (OWEND/BOOVE and BOOVE/FRANCEVILLE) which are in operations but with a 1435 mm gauge which does not enable interconnection with neighbouring networks of 1067 mm gauge.

35. This railway was recently constructed and is in good operating conditions with plans to extend it 245 km to the iron mining site at Belinga.

Projects

36. Several projects are currently in progress in Cameroon, Congo and Zaire, which when completed would substantially increase capacity and efficiency on the subregion's railway system. In addition to the ongoing projects, long-term master plan activities envisage the construction of railways between Sudan/Gabon via CAR, Cameroon/Gabon, Sudan/Zaire, Zaire/Congo and CAR/Cameroon.

Management and Operations

37. At the moment the turn-round times on the railways is not optimum and studies would be carried out and efforts made to reduce them.

38. Most of the railways do not have training schemes or programmes that can carter to their needs in basic, practical, further, advanced and continuing training - although one of them is making efforts to do so.

39. In view of the independent nature of the subregional railways, there is hardly any cooperation among the railways in the operation aspects and any technical cooperation that exists is strictly through the activities of the Union of African railways, since there is no subregion organization dealing with railways.

Harmonization and coordination with other modes

40. The general orientation of all railways in the subregion is from the coast to the interior and all of them serve as the first leg for traffic to the hinter-land and the landlocked countries. The other modes with which they interchange traffic are mainly road and inland water. Yet there is no evidence that the operations of railways in the subregion are harmonized and coordinated with the other modes. In effect, traffic carried by rail to the interior is deposited at railheads where it is picked up by road or inland water mode as and when possible. As such, fresh and perishables products are not suitable railway traffic in the subregion.

(iii) Maritime Transport

41. Maritime transport in the Central African subregion has been fully described in paras. 212 to 229 and what follows below is merely a brief summary.

42. The maritime fleet of the subregion was estimated at 368,579 DWT in 1986 and was about 0.058% of the world total. The subregion's contribution to the objective of 20% world tonnage assignment to developing countries within the context of the Third United Nations Development Decade, should have been 0.17% or about 1.1 million tons DWT. In effect, the subregion had only 34% of its assigned normative capacity.

43. It is not only evident that the subregion is grossly lagging behind in the achievement of the objectives of the current UN Development Decade, but also highly unlikely that the situation could be remedied between now and 1990. Between 1980 and 1985, the subregions shipping capacity has fluctuated between 0.054 and 0.06% of total world capacity, which is rather insignificant to indicate any improvement.

44. Cameroon plans to augment its fleet capacity by about 200,000 DWT by 1990 and unless other countries did the same, the general shipping situation in the subregion would not change much.

C. Comprehensive Modal Presentations

(i) Roads and Road Transport

45. The road transport infrastructure of the Central African subregion[1/] consist of about 284,721 km made up of approximatley 40,800 km primary, 78,300 km secondary and 165,600 km unclassified roads. With a total surface area of about 5.462 million km^2, the road density is a mere 0.05 km per km^2 and the individual rational densities range from a low of .02 km for Chad to 0.13 km for Cameroon. In general, the Central African subregion has the least road density compared with the other African subregions.

46. Of the total regional network only about 2.4 per cent is paved, 11.5 per cent gravelled, 37.6 per cent is earht and 48.5 per cent is tracks. Thus, a substantially large proportion of the road network is basically undeveloped. In general the conditions of roads in the subregion vary from fair to poor although the conditions slightly differ from country to country and from road to road, depending on the importance attached to the road. The major causes of the poor conditions of roads are difficult topography (tropical forests, heavy rains, etc.), inadequate and irregular maintenance and the fact that only a small per cent of the network is paved. A brief country-by-country situation is given below.

47. In the Central African Republic (CAR), only 345 km (24.5%) of the 1408 km Trans-African Highway (Lagos-Mombasa) in that country is paved and the rest is of gravel standard. In view of the fact that this is not only part of the TAH, but the major road in the country, priority is given to both its maintenance and up-grading the gravel sections to paved standards. Funds

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1/ Cameroon, CAR, Chad, Congo, Eq. Guinea, Gabon, Sao Tome and Principe and Zaire.

for its up-grading are being provided by the World Bank, FAC and CCCE. Similar efforts are being made to improve, maintain and up-grade the major feeder roads to the TAH within CAR.

48. In the Congo, there are about 2,373 km of feeder roads to the TAH, of which 27 per cent is paved, 24 per cent gravel and 49 per cent earth roads. Several activities are in progress for the paving/improvement of sections of the major national roads which are mostly feeders to the TAH and constitute the inter-State links to CAR, Cameroon and Gabon.

49. The general condition of the network is poor due to neglected maintenance as a result of lack of funds. The country had introduced a Road Fund since 1980 and this is contributing to the maintenance of roads in the country.

50. Zaire has the single largest land area in the subregion and its road network of about 145,000 km provide largely segmented access to the numerous inland water terminals and railheads in the country. An insignificant fraction (2400 km or 1.7 per cent) of the network is paved and coupled with the difficult topography and heavy rains, large sections of the network consisting of earth roads are passable only seasonally.

51. Besides the poor physical condition of the network, the problems of Zaire's road transport are associated with short road distances, frequent stops and discharging/loading, large number of low capacity bridges and narrow road widths, all of which necessitate the use of small capacity vehicles which are not suitable for the traffic and expensive to operate.

52. Equatorial Guinea has a very small road network of 230 km on the mainland out of which 120 km (52%) is paved and the balance (110 km or 48%) is laterite. The general condition of the network ranges from poor to fair, however efforts are being made by the government to improve the maintenance.

53. The TAH feeder road in Chad extends from Ndjamena to the Cameroon border at Beinamar. Chad's total network consists of 1,113 km, some 156 of which (i.e. 14%) is paved, 424 km (38%) is gravel and the rest (533 km or 48%) is earth roads.

54. As a consequence of many years of political unrest in the country, road maintenance has been neglected for so long and the conditions of all roads in the country are generally poor.

55. The section of the TAH in Cameroon is about 1040 km of which 401 km, 313 km and 320 km are paved, gravel and earth, respectively. Another 2640 km of feeder roads link to the TAH in Cameroon. The country is devoting substantial financial resources to development of roads and especially the sections of TAH in the country.

56. Road maintenance is being given fair attention and as a consequence the overall conditions of the road network are fairly good, except on the sections of the TAH and feeder roads which are earth and are frequently very bad and/or impassable during heavy rains.

57. With regards to vehicular traffic, the subregion has about 356,500 vehicles of all types. The average vehicle density for the surbegion is about 6.9 vehicles to 1000 persons although the individual national densities range from a low of 1.9 vehicles to 1000 population for Chad to a high of 24 vehicles for Gabon, with CAR, Cameroon and Congo with about 9 vehicles to 1000 population.

58. The vehicle composition of the subregion is biased in favour of commercial vehicles. With the exception of CAR where commercial vehicles only constitute about 23% of the fleet, the respective percentages for the other countries are as follows: Cameroon 69.5%, Chad 51.6%, Congo 53.8%, Gabon 66.7% and Zaire 93.8%.

59. With the exception of Zaire, the rest of the fleet in each member country of the subregion is made up of light vehicles and there is no information on the fleet of Equatorial Guinea and Sao Tome and Principe.

60. Registration of new vehicles, which represent the raw data on which annual vehicle growth rates are based is available only for three countries (Cameroon, CAR and Gabon) and even then only for 1982. There is therefore a five-year lag in the data and it is quite probable that given the general economic slow-down over the past five years, the overall vehicle population including new registrations have decreased in many of the countries.

61. Within the subregion, there are about 22 important inter-state road links consisting of about 14,879 km of roads of various design standards and in various conditions.

62. In general there is no uniform road design standard since the existing ones are a carry-over from British, French and Spanish. At the moment, it is hoped that standardization of road design standards in the subregion could be brought about through the activities of the TAH Bureau. Not only do design standards vary from country to country, but road inventory techniques also vary, so that there is no standard method of classifying the conditions of roads on a subregion-wide basis.

Traffic Volume/Flows

63. No complete and reliable data on road transport for countries of the subregion is available although it is known that a very substantial part of the traffic between landlocked Chad and CAR as well as between the mainland countries of the subregion is carried by road transport. The incomplete data is frequently given in value rather than in volume which is a better base for transport analysis.

64. Available data shows that the value of CAR's exports increased from 16.9 to 24.4 billion CFAF between 1979 and 1980, for an annual growth of about 44%, while imports increased from 14.9 to 17 billion CFAF (14%) during the same period. The main export items consisted of diamonds, timber, coffee, cotton and tobacco.

65. In terms of volume, Cameroon alone handled about 57,132 tons (48,591 tons export and 8,541 tons export) of CAR's transit traffic in 1984, while the balance of 11,559 tons were through Chad, Sudan and Nigeria - for a total of about 68,691 tons. The total international traffic was said to be about 82,349 tons, while total internal plus international traffic was about 151,040 tons. It could be assumed that the traffic difference between 82,349 and 68,691 tons was handled by other transport modes, especially inland water and the modal split of internal traffic is not known.

66. A rough estimate showed that they were about 20,210 vehicles in CAR in 1984, made up of 9,440 light vehicles, 6,755 pick-ups, 3,010 trucks and the balance buses and special-use vehicles. While some 86 enterprises have formed "Groupement des Transporteurs Centrafricains," they possess only about 245 vehicles with a registered capacity of about 4,500 tons.

67. Vehicle operating costs and freight/passenger charges are not available. However, given the landlocked situation of the country, the inevitable importance of transport in the economy and concern of the government, all transport fares and charges are established by the government and are more likely to be reasonable than excessive.

68. Between 1973 and 1983, Zaire's external trade traffic rose from 3.6 to 4.8 million tons for an overall increase of about 33.3% or an average annual growth rate of about 3.3% during the 9-year period. Exports rose from 1.5 to 2.3 million tons (i.e. 4.9% p.a.), while imports rose from 2.19 to 2.5 million tons (i.e. 1.5% p.a.) during the period.

69. A closer examination of the traffic shows that from 1981 to 1983, agricultural tonnage declined from 265,597 to 236,342 tons (i.e. -11%), while minerals increased from 1.6 to 1.9 million tons (i.e. +16.8%) over the period. There was a negative growth (-15.2%) for industrial products, which fell from 160,963 to 133,396 tons between 1981 and 1983.

70. The major export commodities included wood, cocoa, coffee, rubber, palm oil, quinquina, gold, copper, zinc, cobalt, diamonds, crude oil, cement and fuel oil. While it is evident that most of the international traffic leaves/arrives the country by sea and uses a combination of modes (road, railway, inland water, air, etc.) for internal movements, the modal split of this movements and annual tonnages involved are not available for any rational analysis. Thus, the share of tonnage handled by road transport can not be determined. It is however definite that road transport plays an increasing important role in the internal movement of traffic within Zaire and between Zaire and the neighbouring countries of Zambia, CAR, Congo, Uganda and possibly southern Sudan.

71. They are no comparable road traffic data for Cameroon although it is evident that landlocked CAR and Chad largely depend on road transit through Cameroon and the northern parts of Congo and Gabon also rely on road transport from the southern area of Cameroon. Similarly, neither international trade data nor road traffic data for Congo, Chad, Gabon and Equatorial Guinea are available in tonnages and the extent of road transport traffic cannot be determined.

72. In general, it is apparent that road transport plays an important role in the international trade among countries of the subregion on the one hand and neighbouring coutnries in other subregions, given the large interior land area and the configuration of national boundaries - all of which tend to favour and facilitate interstate linkages by roads.

Inter-State missing Links

73. While there is some inter-state road transport in the subregion, the current utilization and future development is hamered by the absence or poor conditions of several inter-State links. The number of such missing or substandard links is quite numerous in the subregion as a whole and below is a brief enumeration of some of the most important ones.

74. Some 1547 km of the Lagos-Mombasa TAH transverses the north-eastern part of Zaire and several sections thereof together with important feeder links are missing or substandard. On the Kasindi-Kisangani (1828 km) section of the TAH, the subsections Kasindi-Belika (623 km), Belika-Baego (55 km) and Baego-Madula (128 km) are still earth roads which need upgrading to at least gravel standards to enable inter-State traffic operations.

75. On the (717 km) Kisangani-Bangassou (CAR border) section of the TAH in Zaire, Kisangani-Buta (321 km), Buta-Bondo (200 km) and Bondo-Bangassou are gravel, earth and earth substand-subsections which all need to be upgraded.

76. Rough traffic counts carried out on the Kasindi-Bangassou section of the TAH some six years ago indicated an average of 25 to 100 vehicles per day (vpd) on subsections of this road and that over 90% of the traffic was trucks. These figures might have substantially increased by now and the predominance of trucks indicates the importance of freight traffic to the road in Zaire as well as in other countries.

77. In the CAR, some 1408 km of the TAH crosses the country from east to west from Bangassou to Garoua Boulai (Cameroon border). Two major segments of this road (Bossembele-Garoua Boulai (440 km) and Sibut-Bambari-Bangassou (560 km) are gravel and substandard and can barely serve the national needs, let alone inter-State traffic. Estimates show that traffic on this road range from 15 to 50 vpd with over 50% of it consisting of trucks.

78. A total of about 1040 km of the TAH lie in the Cameroon territory and three subsections totalling some 649 km are substandard. More specifically the Bamenda-Ekok (225 km) and Meindongou-Garoua Boulai (98 km) are substandard gravel roads, while the Tibati-Foumban (32 km) is an earth road - all of which need urgent upgrading in order to adequately serve national and inter-State traffic.

79. Traffic estimates on sections of the TAH in Cameroon show a range of 103 vpd (Manfe-Ekok, Nigeria border), where the road is extremely bad to 2957 vpd (Bafoussam-Mbouda) where the road is asphalted or paved. There is strong evidence that given the construction/upgrading of missing/substandard inter-State links within Cameroon and especially at borders, inter-State road transport would increase very rapidly.

80. Chad, a landlocked country depends almost exclusively on road transit traffic from the neighbouring countries of Cameroon and to a lesser extent on CAR and Nigeria, but unfortunately her major inter-State road links are in poor conditions. For example, the (409 km) Gulendeng-Sarh subsection towards the capital, Ndjamena, once asphalted, has deteriorated to the point of complete reconstruction. This road is part of the Tropoli-Windhoek Trans-Central African highway and acts as a feeder into CAR and Cameroon.

81. The (116 km) Moundou-Lere-Cameroon border section is still earth road which carried some 54 vpd and 300 tons of goods per day some ten years ago. The traffic from Cameroon towards Moundou in Chad is estimated at about 50,000 tons per year and if the road was upgraded to bitumen standard, the traffic will not only increase but costs and charges will decrease.

82. The (125 km) Sarh-Sido road links Chad and CAR and is still a gravel road in very bad conditions. Another road, Sarh-Doba-Moundou (299 km) linking Chad to Cameroon is a gravel road in equally poor conditions.

83. In addition to the above major inter-State missing/substandard roads, there are numerous other missing/substandard feeder links of subregional/national importance. These are merely listed below:

CAR

(a) Sibut-Kagabandoro-Sido-Chad border (32 km) is an earth road.

(b) Boaro-Carnot-Berberati-Nola-Bomassa-Congo border (600 km) is an earth, which when constructed would serve as a feeder to TAH for Congo too.

Congo

(a) Owando-Ouesso (310 km) is a part gravel (125 km) and part earth (185 km) road and is part of the Tripoli-Windhoek TCH.

(b) Ketta-Sembe-Bellevue-Cameroon border (280 km) is part gravel (100 km) and part earth (180 km) and is of multinational importance in that it could eventualy link CAR and Gabon, besides Cameroon.

(c) Linkala-Loubomo (Gabon border 546 km) road is part earth (302 km) and part gravel (244 km).

Gabon

(a) Lalara-Makoukou-Mekambo road (385 km) is a missing link and plans are to construct it as feeder to the TCH for Gabon and Congo.

Cameroon

(a) Fotokol-Kousseri road (102 km), an earth road is part of the Dakar-Ndjamena highway and is designed to provide an addition access to Chad via Nigeria.

(b) Sangmelima-Bellevue (Congo border, 300 km) does not exist as a road and plans are to study and construct it as a feeder to both TAH and TCH, and provide shorter direct access to northern Congo without transiting Gabon.

(c) Ebolowa-Gabon border (90 km) is an existing earth road, which when fully upgraded would provide links to both the TAH and TCH and thus interconnect Congo, Gabon, Cameroon and Nigeria.

(d) Mbamayo-Ebolowa and Ambam-Equatorial Guinea border (160 km) requires feasibility studies and construction to paved standards and would provide links to Equatorial Guinea as well as to Gabon.

(e) Guidjiba-Ftiere/Chad (193 km) is a feeder road to both TAH and TCH and would interconnect Chad and CAR to Cameroon.

(f) Bachenga-Garoua Boulai (551 km) is part of the TCH in the Cameroon territory which links Cameroon to Chad, CAR, Gabon and Congo.

Equatorial Guinea

(a) Ncue-Ebebiyin (120 km) is a laterite road in extremely bad conditions, which links Equatorial Guinea to both the TAH and TCH.

Capacity and utilization of infrastructure and equipment

84. The general picture in the subregion is that by technical criteria, there seem to be adequate road capacity. Even within countries, the roads vary from well designed bitumen, gravel and earth roads and trails in very good or bad conditions as well as the above categories of poorly designed and adequately or inadequately maintained ones.

85. Some of the roads are not adequately and frequently maintained or rehabilited due to lack of funds and technical personnel. The maintenance of road construction and road transport equipment is a general problem in the subregion and the primary reason is due to lack of spare parts. As a result, many pieces of expensive equipment are prematuredly abandoned or immobilized for long periods of time.

86. Road capacity is technically determined on the basis of design standards including design speed and this usually assumes that the road is adequately maintained. Most roads in the subregion are inadequately maintained irrespective of design standards and as such their design capacities cannot be achieved. Even allowing for inadequate but fair maintenance, paved, gravel and earth roads can carry about 1000, several hundred and about 25 to 45 vehicles per hour, respectively.

87. Current estimates show that Annual Average Daily Traffic (AADT) on the inter-State roads in the subregion are as follows: CAR 59, Congo 52,

Chad 54, Cameroon 322 and Zaire 709, while the Average Hourly Traffic is: CAR 9, Congo and Chad 8, Cameroon 50 and Zaire 111. The estimates further indicate that in 15 years hence, the average hourly traffic on most inter-State roads in the subregion will not exceed 100. The extent of capacity under-utilization can best be demonstrated by the fact that the design capacity of a two way road is over 2000 vehicles per hour.

88. The general evidence is that with the exception of inter-urban sections of roads within nations, traffic on the roads in the subregion is very low - indicating substantial under-utilization of road capacity. Traffic is even still lower on inter-State roads between the countries due to the added burden of non-physical barriers. Even in their present poor conditions, traffic on the inter-State roads could double given facilitation and the elimination of the non-physical barriers.

Road Transport Industry

89. Although road transport is common and well accepted within each country of the subregion, the road transport industry and especially inter-State road transport is not well developed in the subregion, except in the two landlocked countries (CAR and Chad), whose almost total dependence on road transit transport leaves them with little alternatives. A brief account is given of the state of the road transport industry in some countries of the subregion, where some crude information is available.

90. Chad attaches great importance to road transport industry, understandably so, because of her almost total dependence on road transport for her international trade traffic. Consequently, a study on the road transport industry (particularly trucking) was carried out about 8 years ago. It is evident that due to the social and economic conditions in the country, the results of the study might not have been fully implemented.

91. Chad's international road freight is estimated at about 255,000 tons per year with a traffic imbalance of 75:25 in favour of imports. The country's own road transport industry carries about 63% of this traffic mostly from the port of Douala in Cameroon. Domestic or internal road freight is estimated at about 226,000 tons per year.

92. The major and noteworthy road transport operations in Chad are organized around Cooperative des Transporteurs Tchadiens (CTT), which in effect is a cooperative of private operators with about 653 vehicles with a combined static capacity of about 10,733 tons and 3,476 m^3. The classification of the fleet is roughly 252 light trucks (5-15 tons), 356 heavy trucks (20-30 tons) and 55 tankers.

93. Most members of the cooperative own and operate one truck while only 7 own 5 or more vehicles. Although CTT is granted the monopoly of organising and controlling road transport activities in the country, there exist an active minority of small internal operators who do not belong to CTT.

94. CTT seems to be well organized and provides reasonably good services, with Headquarters in N'djamena and branche offices/representatives at Garoua and Ngoundere in Cameroon, Bangui in CAR, Maiduguri in Nigeria and Moundou and Sarh in Chad.

95. In spite of Chad's small fleet and not-so-good road conditions, the general conclusion is that there is adequate if not excess road transport capacity, which if properly maintained and marginally improved would adequately meet future demand into the next century.

96. In the Central African Republic, the road transport industry is largely made up of the one-vehicle owner operators, cooperatives and concessionaires' own account operators.

97. The Groupement des Transporteurs Centrafricaines (GTC) is an organization of some 60 better equipped private truckers with about 200 vehicles and responsible for hauling about 70% of the domestic freight of about 400,000 tons per year. GTC carries about 15% of CAR's overland imports/exports, about 10% of Chad's and some traffic to/from Sudan.

98. The government's involvement in road transport operations is limited to urban and inter-urban passenger transport and these do not seem to be well organized and managed.

99. At the moment, it is understood that the World Bank plans to carry out a study of the transport industry, especially trucking and hopefully the recommendations could lead to a proper organization of road transport operations in CAR.

100. The Congo relies mostly on rail and river transport for her internal and external traffic, since most of the population centes are along the Congo/Zaire River and the national railway runs from Pointe Noir to the capital Brazzaville by the river with a branch line to Mbinda at the Gabon frontier.

101. As a consequence, the road transport industry in the Congo is insignificant, largely unorganized, in the hands of minor individual operators and has so far never commanded serious government attention, which has been largely focused on rail and river transport.

102. It is only of recent that the government decided to carry out a study on the organization and operation of an efficient road transport industry.

103. The transport sector in Zaire is dominated by (i) the Office National des Transports (ONATRA), which manages the ports of Matadi and Kinshasa and the railway between them and operates river transport services; (ii) Societe Nationale des Chemins de Fer Zairois (SNCZ), which is responsible for the national rail network and the important trans-shipment port of Ilebo on the River Zaire; and (iii) the Office des Routes (OR), which is mainly responsible for road construction and maintenance.

104. There are elements of both private organized, individual owner/operator and company own account road transport operations in Zaire, while the government has confined its road transport operations to urban passenger traffic.

105. In 1984, the road transport mode carried about 3.7 million tons of freight and performed about 955 million ton/km, which represented 36% and 22% of the total freight and ton/km, respectively[2/]. Even though the number of vehicles and their total capacity involved in freight transport is not available, it is evident that road transport plays a significant role in Zaire - particularly so, given the countries large surface area, widespread populated areas and the flexibility of the mode.

106. Public sector involvement in road transport services relates to urban transport only and the operations suffer from inadequate capacity (excess demand) and inefficient management, so much, so that private companies and government agencies have to provide transportation for their personnel. The government is contemplating several alternative solutions to the urban transport problems.

107. In conclusion, the extent of Zaire's inter-State road transport is not obvious.

108. While it is acknowledge that the road transport industry in Cameroon has been developing rapidly in recent years, detailed information on the industry is not readily available. It is estimated that by 1984, some 7,400 companies and individual owner/operators with a total of about 12,400 vehicles (trucks) were engaged in road freight operations. The rapid development of the road transport industry in the country has been attributed to the liberal economic and regulatory policy of the government.

109. With a railway line from Douala to Ngaoundere and a short line from Douala to Nkongsamba, most parts of the country are served by road transport. Coupled with the fact that Cameroon serves as the main transit for Chad and CAR and that traffic to these countries is mainly by road, road transport is not only extremely important but operations are fairly intensive and extensive.

Traffic Regulations

110. While there are bilateral road transit agreements/protocols between some member States in the subregion and osme general provisions for cooperation in all transport aspects under the UDEAC and ECCAS Treaties, in practice, there are no uniform or harmonized traffic rules and regulations in the subregion. As a result, the traffic rules and regulations differ from country to country in the subregion.

2/ E/ECA/TRANS/38: 2nd Zaire Round Table.

111. Unlike in the ECOWAS and PTA areas, there is no common subregional inter-State motor vehicle insurance scheme. There are therefore no common regulations on speed limits, axle load limits/distribution, insurance liability and a host of other roads and road transport related regulations/rules and their enforcement.

112. With regards to coordination of road transport with the other transport modes, there are similarly no established rules and regulations although individual countries may have specific procedures and practices for such coordination. Even where bilateral road transport accords between two countries exist, they do not usually specify coordination, let alone the modalities between roads and other modes.

113. In conclusion, the general conditions of inter-State roads in the subregion is poor and in several cases, inter-State road links are completely missing or in very bad conditions.

114. Several reasons account for the situation, including but not limited to the following:

(i) lack of financial and human resources;

(ii) difficult terrain and high cost of road construction in the subregion;

(iii) inadequate and infrequent maintenance;

(iv) non-readily percievable and realisable benefits from roads designed to mostly serve neighbouring (landlocked) countries;

(v) scarcity of suitable locally available construction and maintenance materials; and

(vi) lack of suitable subregional training institutions in which low and intermediate level technical and administrative personnel could be trained.

115. Inter-State road transport operations in the subregion are minimal not only as a result of the poor conditions of the roads but partly as a result of low demand (low volume of freight), fostered by the non-development of intra-subregional trade and the existence of physical and non-physical barriers to the free movement of goods and persons by roads. The subregion is also sparsely populated and the great distances between countries and major population centres entail very high costs of road construction/maintenance with only marginal and long-term benefits, dependent on close economic cooperation and development of intra-subregional trade.

116. The extent and speed with which efficient inter-State road transport facilities and operations in the subregion will develop will depend on the overall economic cooperation which will develop in the subregion.

(ii) Railways

117. The railways operating in the subregion are:

- Congo - Ocean Railway - CFCO
- Cameroon National Railways (RNCF/REGIFERCAM)
- Zaire Railways (SNCZ and CFMK), and
- Transgabonese Railways (OCTRA)

(Angola Railways was not included in the survey)

118. The railways are not interconnected since their tracks are of various gauges: RNCF - 1m; CFCO - 1.067m; SNCZ and CFMK - 1.067m and OCTRA - 1.435m. They are all modern railways and currently in operation. OCTRA is under construction, whilst CFCO and RNCF have just completed major track realignment. Major improvements have also been made in the transport capacity with the purchase of new rolling stock units, and the improvement of maintenance methods. Telecommunications and signalling systems have also undergone major improvements. Commendable efforts have also been made with regard to staff training.

119. This study undertaken by the ECA, in the hope of encouraging the standardization and coordination of various transport modes, aroused keen interest in railway authorities and administrations.

120. Existing main constituent components

(a) The Congo-Ocean Railway (CFCO), together with the port of Pointe-Noire and the river transport service, comprise what is known as the TransCongo Communications Agency - ATC. This railway, 515 km long, is a vital link in the transport network between Chad and the port of Pointe-Noire. Track equipment varies from 30 to 60 kg per metre and is heterogenous. Two important sections of the line have been rehabilitated. Track realignment between BILINGA and LOUBOMO, a distance of 91 km, was started in July 1985.

121. COMILOG utilises the CFCO tracks on a toll basis for approximately 2000 km between MONTBELLO and Pointe-Noire.

122. The maintenance workshops are well equipped with modern machines.

123. The rolling stock comprises 47 track locomotives and 20 shunting engines, 90 passenger coaches and corresponding equipment, and 1150 assorted wagons.

124. The total number of staff employed is 5,620 workers, of which 595 are temporary staff.

125. Traffic volume is about 2.5 million passengers and 1.15 million tons of cargo (exclusive of COMILOG traffic).

(b) Cameroon National Railways (RNCF) is mainly a single-track line. The western line, Douala/Nkongsamba (172 km) is outdated and is a serious threat to the railway's operations. The TransCameroon line, Douala/Ngaoundere (884 km) has recently undergone major rehabilitation. The EDEA-MALOUME section, a total of approximately 111 km, has been realigned. Hauling stock comprises 116 components, (locomotives, power trolleys and rail cars), 109 passenger coaches and corresponding equipment and 1794 wagons. Generally, the equipment is relatively modern and shows high rates of availability. The staff comprises 6,700 workers with 22% permanent staff and 78% temporary workers. Passenger traffic amounts to 2.2 million, whilst goods traffic is 1.9 million tons.

(c) Zaire Railways comprises the SNCZ (Zaire National Railways Corporation) and the CFMK (Matadi/Kinshasa Railway).

126. Zaire National Railways (SNCZ) has a total of 5280 km of tracks and is one of Africa's major railways. Its 1.067 m gauge could facilitate its interconnection with the neighbouring networks in Zambia and Angola. The Matadi/Kinshasa Railway (CFMK) is 366 km long.

127. In most of these railways, the superstructures are heterogenous but worn with age. Since 1983, a modernization programme has been undertaken in sections with regard to superstructures, alignments, structures (bridges etc.).

128. Zaire Railways are equipped with quite extensive maintenance and repair workshops to cope with all their requirements.

129. Tractive stock comprises 284 components with a low rate of availability (approximately 50%). The total number of coaches for passengers is 423, with corresponding stock, whilst there is a total number of 8345 goods wagons. The equipment is relatively old and as such reduces the transport capacity of the Railways. Passenger and goods traffic have dropped considerably. Total goods traffic amounts to 5.6 million tons and passenger traffic on Matadi/Kinshasa (CFMK) Railway is just 0.4 million passengers.

130. (d) The two main sections of the Transgabon Railway (OWENDO/BOOVE and BOOVE/FRANCEVILLE) are already in operation, but the gauge of the tracks (1.435 m) does not facilitate interconnection with neighbouring railways whose tracks are of a different gauge (1.067 m). This railway (635 km long) constructed fairly recently, is operating very satisfactorily. The third section of the Transgabon Railway will link the towns of BOOVE and BELINGA, a distance of 245 km. It is being constructed specifically to provide a link with the iron ore mining site at BELINGA.

RAILWAY PROJECTS

Decade Projects

131. Generally, these projects involve:

- rehabilitation and modernization of infrastructures and acquisition of rolling stock;
- realignments;
- construction of new lines; and
- vocational training.

(a) Projects related to the rehabilitation and modernization of infrastructures and acquisition of rolling stock, were carried out or are in progress in Congo and Zaire. Congo RAP 11-001 - Rehabilitation and modernization of 342 km of the Congo-Ocean Railway (CFCO). LOVBOMO to Brazzaville section - part financing has been obtained and work has started.

Zaire - RAP 48-001 - Rehabilitation of the Lubumbashi - ILEBO line (First section - 210 km). This project has not yet received the necessary financing. RAP-48-004 - Replacement of rails on on the MATADI - KINSHASA line. The first two phases of this project (125 km and 65 km) are almost complete. Financing for the third phase (125 km) is still being negotiated.

RAP 48-003 - Supply of equipment to the SNCZ (2nd phase). Financing for this project is still being sought.

(b) Realignment Projects

132. Cameroon RAP-06-001 - Realignment of the Douala - Yaounde line - the ESEKA - MALOUME section (34 km) has received full financing and the work is nearing completion.

133. Congo - Realignment of the CFCO Line between BILINGA and LOUBOMO was not included in the Decade because research and work done on this line was already at a very advanced stage. The new line was commissioned in July 1985.

(c) Construction of new lines.

134. RAP-16-001 - Construction of the Transgabon: BOOUE - FRANCEVILLE Section has received full financing and work is nearing completion.

135. RAP 16-002-Construction of the BOOUE-BELINGA Section. Research studies have been carried out soon to be followed by invitations to tender.

(d) Vocational training.

136. Project RAP-42-002 involves vocational training for SNCZ staff. This project has not yet been undertaken.

137. Virtually all these projects are at research or negotiation or implementation stages. It is therefore not expedient to establish any order of priority whatsoever. It is only unfortunate that certain projects which are necessarily complementary to projects already mentioned, were not incorporated in the Decade projects.

Projects in the railway master plan

138. The projected lines will cover a total distance of approximately 5000 km. They will include the following rouces:

- Sudan/Gabon via the Central African Republic
- Cameroon/Gabon
- Sudan/Zaire
- Zaire/Congo/SNCZ/CFMK and connect with the Congo-Ocean Railway via a bridge accross the river between KINSHASA AND BRAZZAVILLE.

139. The establishment of these routes proposed in the master plan will provide alternative outlets to the sea for the landlocked and semi-landlocked coutnries in Central Africa.

140. The BANGUI/OCEAN railway project was researched in various studies. At the moment efforts are being concentrated on the line linking BANGUI/MBAIKI/NOLA/EBOLOWA/KRIBI (GRAND BATANGA PORT).

STANDARDIZATION OF RAILWAYS

Management and Operations

141. The study considered the following aspects:

- railway management: turn-round of wagons and vocational training;
- railway operations: tariffing and regularity of traffic

(a) Turn-round of wagons - any increase in the wagons' turn-round time tantamounts to a decline in the transport capacity because this reduces the number of consignments transported. It is advisable to observe, from record cards, the duration of the various successive phases in the use of wagons:

- outgoing terminal operations
- transportation by train
- incoming terminal operations

142. These statistics will be compiled and analysed in respect of haulage of fully laden and unladen wagons. Furthermore it is advisable to take into account intermediary shunting operations and with regard to international traffic, customs and immigration formalities at the border.

143. Consequently, appropriate action will be taken to improve the turn-round time of wagons.

(b) Vocational Training

144. In the area of vocational training the main recommendation concerned:

- the organization of training programmes: In railway administration, it is necessary to create a department of human resources responsible for staff administration and vocational training. REGIFERCAN is currently experimenting on this system;

- Method of training: a training scheme, based on a programme approved by the various heads of the production services of the railway, should be developed and implemented. This scheme should include various types of training, namely:

1. basic training - organised for newly employed staff to facilitate their adaptation to the job.

2. further training - preparation for competitive exams for promotion purposes.

3. advanced and refresher courses - training programmes to be completed eventually during the course of their carrier.

4. practical training courses, seminars, symposia and other types of complementary training.

145. In the railway sector, some form of continuing training must be organized.

146. (c) tariffing - 3 types of tariffs have been recommended:

- passenger rates;
- freight rates;
- parcel rates.

147. Transport tariffs must reflect operating costs. Being cognizant of operating costs makes it possible to determine the tariff structures. The tariff levels depend on decisions which must be taken judiciously.

148. Passenger rates must be on a sliding-scale so as to encourage long distance travel. Basic rates can vary from one section to another, in keeping with the level of competition from other transport modes. Each passenger is entitled to free baggage allowance of 30 kg maximum.

149. Parcels can be transported by passenger or by freight trains and this would therefore necessitate the establishment of two types of tariffs.

150. The rates for goods sent by complete wagons must confirm to the cost of transport and vary in relation to the economic value of the transport mode (for example, value and nature of goods, type of transport, export).

151. All tariffs should be established in keeping with the rates for passenger and per ton for the various scales of distance under consideration.

152. Railways according to recommendations made by the Union of African Railways, should create operational units for calculating transport costs with a view to establishing the tariff structures, as well as serving as a useful guide for some administrative decisions. Exemplary efforts have been made in this direction by the Central African networks.

153. Price policies, particularly fare increases have not been coherent. The Ministers concerned should consider this problem in order to prevent loss of revenue for the railways. As a rule, no price should be fixed below the marginal cost.

(d) Regularity of traffic

154. Organization of the section responsible for regularity of traffic involves:

- establishing time tables;
- operating conditions for trains;
- use of personnel and rolling stock.

155. Time tables established according to a specific method should be feasible and will give rise to experimental runs in order to calculate and ascertain standard runs.

156. Transport plans should classify trains in various categories: regular trains and extra trains (these are operated upon request). The order of priority of trains should be established, as well as their operating conditions.

157. Rotation of staff and locomotives enables the rational use of driving crews and rolling stock/equipment. Such rotation should be organized and followed-up by a staff member from the operations section who is permanently seconded to the headquarters.

158. It has been recommended that regular monthly meetings be organized, bringing together the various sectors involved in operations, including all

officials in charge of transport, the operations headquarters, tracks and equipment. These meetings will closely monitor the conditions under which traffic and transport are organized and in particular, examine the cuases of persistent delays inorder to take appropriate measures to improve the situation.

Technical aspects

159. The study considered the following aspects:

- Maintenance of stock,
- Maintenance of tracks and equipment.

Adequate maintenance is reflected in an improvement in the availability rate of the rolling stock, as well as in the satisfactory condition of equipment throughout the period that they are economically viable.

(a) Stock maintenance: It is recommended that efforts be made to carry out preventive maintenance operations on the rolling stock. This implies very strict monitoring of stock procurement and a high level of training for the staff. However, it is also necessary to sensitize ministries and financial backers on these problems which are so crucial for railway operations. Furthermore, in acquiring new rolling stock, consideration must be given to:

- maximum standardization;
- the network's experience with the required stock taking into account purchase price and maintenance costs;
- prospects for procurement of stock.

(b) Maintenance of track and equipment: modernization of tracks has altered the maintenance system and requires increased mechanization and mobility of staff. The staff is now grouped together at district level and forms the basic unit for track maintenance. It is also the headquarters for heavy duty maintenance equipment.

160. It is advisable to use the maintenance method referred to as "long sections" with access through the works yard whenever possible.

161. Periodic inspection of the condition of the tracks should be carried out by means of a line inspection car equipped with testing equipment.

162. With regard to telecommunications and signalling, which is developing rapidly, it is advantageous to upgrade this section into a full-fledged department so as to officially recognize its importance. Communications maintenance programmes, just like those designed for track maintenance, should be prepared with utmost care and should always be adhered to.

163. Track replacement should be brought to the notice of railway administrators, both from a technical point of view (programming and execution) and for accounting purposes (valid appropriation of expenditure).

Coordination of transport modes

164. In Africa today, there is an obvious inadequacy of transportation services. There must be some coordination of all existing modes, so that they may be operated at the least cost to the community.

165. First and foremost, coordination presupposes equating costs and harmonizing fares. To this end, it would be advisable to link the State with the railway by means of a contract programme, stipulating the mutual obligations of the signatories.

166. With the State's intervention, it would then be possible to succeed in planning transportation; thus implying an evaluation of demand and the optimum distribution of traffic to the various transport modes in accordance with their capacities, so as to safeguard the best interests of the community.

Summary of Recommendations

167. (a) Undertake studies aimed at defining measures likely to reduce the operating turn-round time of the rolling stock. Follow-up the implementation of these measures;

(b) Create within the railway administration, a department of human resources responsible for personnel administration and vocational training;

(c) In relation to training, adopt a new methodology involving: basic training, further training for promotion; refresher courses, advanced courses, and various activities relared to practical training programmes, seminars, colloguia ..... with a view to establishing a continuous training scheme;

(d) The structures of passenger and goods tariffs should strictly reflect the trends in costs, if not their levels;

(e) Coherent price policies should be defined in order to take into account the various parametres: costs, competition from other transport modes, constraints of public service, use of the railway as an instrument for development;

(f) No transport fares should be fixed below marginal cost;

(g) A method for drawing up timetables and preparing transport plans shall be established on the basis of a regular service and an additional request service, comprising components incorported in the operations to provide the regular service, as well as reserve stocks to operate the additional request service;

(h) Maintenance of rolling stock should be primarily preventive and programmed;

(i) Track maintenance should tend to favour mechanization and mobility of personnel, with concentration of resources at district level;

(j) As far as possible "long sections" maintenance technique should be applied, as well as periodical inspection of the line with instruments;

(k) Telecommunications and signalling services should be upgraded to full department status so as to establish its current level of development;

(l) Track replacements should be given serious attention for technical and accounting purposes;

(m) Coordination of various transport modes should be a constant concern for countries;

(n) It would be advisable to link the State and the Railway through a contract-programme, stipulating the mutual obligations of the signatories.

(iii) Air Transport

168. The development of air transport in the subregion has made positive strides between 1980 and 1984.

(a) Subregional passenger traffic increased at an average rate of 9.3 per cent per year to reach the level of 6,000,000 passengers in 1984. This growth rate exceeded the average for the entire continent by about 1.8 per cent.

(b) Subregional air freight recorded an average annual increase of 2 per cent. It increased from 249,170 tons in 1980 to 270,062 tons in 1984. This increase was very low and is evidence of lack of air freight traffic among countries in the subregion.

169. An in-depth analysis of the traffic reveals that most freight movements are towards areas outside the subregion and that only Douala, Libreville, Kigali and Kinshasa airports obtain 50 per cent of their international passenger traffic from intra-African traffic. The remaining airports have uni-directional passenger traffic towards Europe.

170. According to estimates based on previous trends, it is anticipated that by 1995 passenger traffic will attain 13.7 million whilst freight will be in the region of 305,000 tons.

Subregional air route network

171. On the assumption that an air route is effective if:

- it makes it possible to link two towns within 24 hours at most;
- it is operated at least 3 times a week with an aircraft whose capacity is at least equal to that of a B737 (or to traffic demand); and
- it does not have to contend with competition from surface routes:-

It has been observed that:

(i) out of 110 possible routes (a route linking paris of towns is counted twice), 52 or 47.3 per cent are operated at least once a week and 58 are non-existent;

(ii) out of 38 direct routes of the 52 existing routes, 8 give satisfactory service, 18 operate fairly well and 12 are considered as mediocre. The last two categories are primarily affected by inadequate operations;

(iii) there are 14 routes with connections, out of which only two (Kigali-Libreville-Kigali) require two flight changes. Added to these are two routes, Libreville-Brazzaville with connection at Point-Noire;

(iv) the towns which enjoy the best services and best routes are Douala, Libreville, Brazzaville, Kinshasa and Bangui;

(v) the towns with the worst connections, irrespective of the types of routes which are of interest to them are Sao Tome, Ndjamena and Kigali;

(vi) among the landlocked countries the CAR seems to have more direct connections with other countries in the subregion.

The Network

172. From the proceeding analysis, it can be concluded that the subregion's network is not very developed and that there are still incoherent factors which make travel within the subregion extremely long and difficult.

Air Transport Agreements

173. Out of 180 bilateral agreements signed by the countries in the subregion, 103 were with African countries and 77 with other countries in the world. Of the 103 agreements signed with African countries, it has been observed that:

(a) 29 per cent were signed with West African countries. Of these, 40 per cent have not been implemented and this implies few direct routes between the Central and West AFrican subregions.

(b) 27 per cent were signed among the Central African countries themselves. 36 per cent of these agreements were not implemented which means there are no air links among certain capitals in the subregion;

(c) 23 per cent were signed with East African coutnries. The non-application rate is 46 per cent and this makes travelling to East AFrica rather difficult;

(d) 21 per cent with North Africa, of which 76 per cent were not implemented. This obviously means inadequate links with that subregion.

174. As far as agreements with non African States are concerned, these were signed primarily with Western Europe. This reflects the predominance of historical, political and economic relations with the former countries which were pioneers in establishing contacts with the various coutnries in the subregion.

Airlines in the Subregion

175. Airlines companies in the subregion are currently in deficit situations because the income generated is inadequate to cover operating costs. This is one of the main reasons which induced some of these companies to engage in several service activities, namely: assistance with stopovers, general representation, etc... Most companies could rely on State subsidies to balance their budgets.

176. Owing to continued use of obsolete aircraft that could face charges of violation of regulations on noise standards, airlines in the subregion are faced with the problem of replacing 80 per cent of their aircraft operated on international flights. This will entail very heavy investments.

178. Airlines cooperation in the surbegion and with other African companies is not yet very well developed since it only covers areas such as assistance with stopovers and general representation. On the other hand there are several pool agreements which countries in the subregion have signed with foreign companies.

Infrastructure

178. In recent years, especially after the development of the AFI-VI Plan in 1979, major investment were made by the States in the subregion to improve the general conditions in their international airports and their main domestic airfields.

179. These investments were particularly useful in contributing to the increase in the number of airports capable of handling wide-bodied aircraft. Indeed, from just five such airports in 1977, namely: Bangui, Brazzaville, Kinshasa, Libreville and N'Djamena, their number increased to eleven in 1985 with the improvement of the airports at Bujumbura, Douala, Franceville-Mvengue, Kigali, Luanda and Malabo.

180. The upgrading works carried out by the States generally involved:

- strengthening and lengthening of runways;
- strengthening and widening of the tarmac (apron);
- repairing traffic lanes;
- construction of new air terminal buildings;
- installation or replacement of radio monitoring equipment and instrumental landing equipment.

Aeronautic Personnel

181. In the administration of airlines, airports and air services equipment in the subregion, there is:

(a) an appreciable number of expatriate staff, which entails exhorbitant costs to the airlines;

(b) lack of adequate training schemes and qualified national staff with sufficient experience in their areas of responsibility;

(c) ineffective personnel administration which results in frequent and numerous staff changes;

(d) lack of training programmes based on the needs for expansion and development of the company.

MAJOR PROBLEMS IN AIR TRANSPORTATION IN THE SUBREGION

182. Following this brief analysis of air transportation in the subregion, its major problems can be summarized as follows:

A. The political, administrative and legal aspects

183. The wide range of national aeronautical laws and regulations is such that despite their spirit of cooperation and integration, subregional States have still not succeeded in establishing a coordinated civil aviation system in respect of both aerial navigation (infrastructures, equipment, services, organization and administration of air space) and air transportation (issue of licences, technical specifications for operating aircraft, organization and monitoring of private air transport operations, granting of traffic rights, authorization of special flights, etc.).

184. Consequently national air transport policies do not necessarily take into consideration the requirements for subregional harmonization and coordination.

185. Some airport administrations are not autonomous and are consequently faced with financial and material problems which sometimes adversely affect management and maintenance of infrastructure and equipment, as well as the functioning of aeronautical services.

186. Generally, the level of facilitation at airports is still very low.

187. Civil aviation authorities and airlines do not always have adequate statistical services and the subsequent lack of reliable data makes it difficult to monitor, supervise and control the operations of subregional air transportation.

188. Despite the fact that bilateral air agreements contain a clause pertaining to transfer of surplus income, airlines in some countries still have difficulties in this regard.

189. Some airlines have difficulties in paying for services received abroad. This is due partly to problems related to currency convertibility and to a certain extent to the absence of a clearing house that could be favourable to air transport within the subregion.

190. The establishment of equivalent exchange rates between the American dollar and some national currencies has had a negative effect on air transport tariffs, thus making air transport seem outrageously expensive.

191. The agreement on the creation of an African mechanism for determining air fares, has still not been implemented owing to inadequate ratification by other African States as well as by some subregional States.

192. With regard to the harmonization and coordination of air transport and other transport modes, customs regulations in some coutnries have been a major setback to the use of multi-modal transport systems within a given country as well as between/among two or several countries. This is due partly to too many check points and partly to the multiplicity of documentary procedures to be completed for each mode.

193. Air transport is still not being fully utilized in the subregion for transporting freight, particularly to/from landlocked coutnries, on account of the continued lack of a transport tariff policy reflecting not only the nature and value of products but also all the characteristics (advantages and constraints) of the various modes of transportation.

B. Development of air navigation

194. In some member States, there is a lack of air navigational equipment and reliable aeronautical communications network. This has been a major obstacle to coordination among certain neighbouring countries. Consequently,

flight safety is not satisfactorily monitored all over the vast FIR. Upkeep and maintenance of infrastructure and equipment in some airports are undertaken by various services and bodies. This gives rise to general administrative and security problems.

C. Air transport operations

195. Within the subregion there are various types of air craft but no coordinated system has been developed for the upkeep and maintenance of the air craft. Furthermore, certain old model air craft currently in operation, will, as of 1988, be affected by new international regulations concerning aircraft noise.

196. Cooperation among subregional airline companies in technical, operational and commercial maters, is still virtually non-existent.

197. Airlines generally do not offer promotional fares, which would contribute to the development of existing services.

198. The subregion is endowed with significant tourism potential which could be exploited to its advantage given the right type of organization and cooperation.

199. Subregional state-owned airlines are generally in financial deficits and find their operating costs heavily weighed down by various types of expenditure, namely: fuel and lubricants, staff, maintenance, depreciation, aeronautical fees and stopover charges.

200. Some airline companies have quite large numbers of expatriate crews on their staff. These crews cost far more that they would have spent on indigenous crews, which in fact would have meant a lot of savings for the airlines.

201. Other personnel-related problems facing the airlines include overstaffing, frequent changes in the administration, the unstable nature of jobs, lack of career advancement prospects for some staff members, the absence of job descriptions and well defined objectives of activities.

202. Training of civil aviation personnel including air crews and aircraft maintenance engineers is organized according to different procedures and this is not conducive to the harmonization of training schemes in the subregion.

203. Intra-subregional services are affected in some States by lack of viable traffic; in particular freight traffic within the subregion is at a very low level.

204. The intra-subregional network is rather heavily concentrated in the coastal areas of the subregion to the detriment of the landlocked coutnries. Consequently some towns have very poor services and it is difficult to have connections from one twon to the other.

205. The lack of co-operation in marketing activities among subregional airlines does not facilitate the full fledged development of intra-subregional services or the reduction of marketing costs to the airlines.

206. In this regard, it has been observed that African airline companies do not fully exploit their share of traffic rights granted to them in bilateral air agreements, signed by the States in the subregion.

207. In the reservations activities, African airlines have still not succeeded in cooperating together to establish their own system.

Recommendations

208. At the end of the analysis of air transportation in the Central African subregion, as well as prospects for its harmonization and integration with other transport modes, the following recommendations have been proposed with a view to finding satisfactory solutions to the main problems identified above. These recommendations are addressed to States within the subregion, to subregional airline companies as well as to regional and international organizations.

A. Recommendations to Countries

209. It is recommended that countries within the subregion should undertake the following short-term measures and actions:

1. Harmonize their aeronautical legislations and regulations in all aspects of civil aviation, so as to establish a legal-political framework conducive to:

   (a) the coordinated development of air transport at the subregional level;

   (b) the harmonization and coordination of air transport with other surface modes;

2. Harmonize their practices and procedures in relation to:

   (a) issue of licences
   (b) technical specifications for operations
   (c) aircraft
   (d) granting of traffic rights
   (e) authorization of special flights

3. Standardize training for civil aviation personnel, including crews, aircraft maintenance engineers and encourage the use of the Mvengue Multinational Centre in Gabon for the training of the latter group.

4. Regulate private air transport operations to prevent them from being prejudicial to the services of regular airlines.

5. Create, wherever necessary, autonomous airport management bodies so as to protect them from the pitfalls of material and financial difficulties.

6. Establish uniform or appropriate aeronautical fees in order to promote efficient airport management and endeavour to take into account the airlines' concerns, bearing in mind the repercussions the fees could have on their operational costs.

7. Implement within the shortest possible time, the recommendations of the ECA study (TRANS/AIR/CONF/84/8) on facilitation in Africa.

8. Establish, within the various civil aviation administrations and the airlines, adequate statistical services so as to enable access at all times to data relevant for evaluating and analysis of air transport.

9. Monitor the complete implementation of all clauses in bilateral air agreements, particularly those pertaining to revenue transfers by airlines and attempt to resolve any difficulties in this regard.

10. Facilitate payment operations which the airlines may be required to make among themselves or with a third party, including in particular, the air transport product among those who are covered by the Clearing House envisaged by the Economic Community of Central African States (ECCAS).

11. Undertake all necessary measures within the shortest possible time to ratify the Convention establishing the African air tariff conference (AFRATC), adopted in 1980 by AFCAC member States. This would facilitate the creation of a mechanism for determining air tariff in Africa, thereby making it possible for African airlines to benefit from a regional framework for consultations and subsequent coordination of their positions, before embarking on international negotiations in this sector. In the future, if the need arises, these African airlines would then be in a position to break away from the existing multilateral mechanism.

12. Revise and if necessary harmonize national legislations and regulations on the movement of goods, with a view to facilitate multimodal transportation of these commodities.

(a) For example, within a given coutnry, between the terminal of various transport modes. Between the port, the road haulage depot and the railway terminal on the one hand, and the airport on the otherhand; treating this section as an artificial duty-free zone and consequently making it possible for clearing formalities to be concluded at the final customs check point;

(b) Between two or more States in the subregion, the goods being transported with a single document from country of origin right up to the destination;

(c) And in both cases, through standardization and simplification of customs documentary procedures.

13. Ensure that terminals of the various transport modes are provided with the appropriate and necessary equipment and facilities required for storage and handling of goods and that these terminals are linked together (particularly the airport and the other terminals) by a suitable means of access.

14. Define and implement policies on transport tariffs which reflect not only the nature and value of traffic, but also all the characteristics of various transport modes; or if necessary proceed with the predetermined distribution of freight between air transport and the surface modes in order to place air transport in optimal conditions to sustain the efforts aimed at providing access to landlocked countries, particularly with regard to freight transportation.

15. Grant adequate priority to agricultural and mining production designed for export and encourage trade exchanges within the subregion in order to provide a more effective stimulus to the development of air freight traffic.

16. Utilize FOB rather that CIF method for goods clearance through customs.

17. Organize and develop subregional tourism by installing the relevant facilities on tourism sites and by operating combined circuits that are of interest to two or more countries at the same time.

18. Ensure that in fixing tariff levels for aircraft fuel and lubricants, the airlines are not faced with excessively high operational costs which would ultimately lead to further deterioration of their financial situation.

19. In the domain of aerial navigation, member States should:

(a) endeavour to acquire the equipment, install and service them as recommended for each subregional in the AFI-VI plan, in order to improve aerial navigation in the subregion.

(b) utilize the subregional groups' mechanism to facilitate consultation and coordination among the States.

(c) ensure that all necessary equipments have been installed, that communication and aeronautical links are reliable and that coordination procedures are operational before procedding to reorganize air spaces (subdivision of FIR into sectors).

(d) strive to advance from flight information service to flight control service.

20. If necessary, create a multinational body similar to ASECNA responsible for managing the installations, equipments and air navigational services.

21. In matters pertaining to national airlines administration, abstain from taking measures likely to prejudice, even to a limited extent, the smooth functioning of these enterprises. Avoid for example, frequent changes in the administration and ensure that staff recruitment is not subjected to any form of pressure and is carried out strictly on the basis of the qualifications and skills required for the posts to be filled.

Long term recommendations

22. Envisage the creation of a subregional multinational air transport company for passenger and freight.

B. Recommendations to Airline Companies

210. It is recommended that airline companies undertake the following measures and actions:

Short term recommendations

1. Standardize aircraft and other related equipment and establish a coordinated maintenance and overhauling system in confirmity with the conclusions of the feasibility study initiated by AFCAC in 1984, concerning the creation of a coordinated network of of aircraft maintenance and overhauling centres in Africa. To this end, utilize as often as possible, the existing centres in the subregion (for example, Kigali for Twin - Otter aircraft; brazzaville for short-medium distance aircraft, such as the Caravelle or B727; Libreville for F28 aircraft; Douala for B737, or B707 aircraft); or utilize other African subregions (for example, Abidjan for DC8 aircraft and Dakar for wide-bodied jet aircraft, when the Air Afrique project is completed

2. Conclude technical pool agreements in regards to the above.

3. Constitute a purchasing pool for the acquisition of aircraft and spare parts covering the widest range of aircraft and equipment possible; as well as for important consumer goods such as fuel and lubricants.

4. Make particular efforts to improve the airlines' financial positions, especially through strict control of important expenditure headings and through the implementation of an effective cost policy, which has definite ceilings for expenditure.

5. Consequently, conclude with their respective governments plans for improving their financial situation, which will stipulate precise ceilings for each year, as well as the objectives of productivity for each employee.

6. Prepare job descriptions for each service and make every effort to continuously motivate deserving staff by guaranteeing continued employment, as well as by creating optimal conditions for career prospects.

7. With regard to providing subregional services, look beyond their situations as competing enterprises, in order to foster sound and effective cooperation among themselves, in all sectors and promote optimal exploitation of internal air services, from or towards the subregion, bearing in mind the need to establish as homogeneous a service as possible, covering all areas of the subregion.

8. To this end, be more willing to grant each other the possibility of exercising the fifth Freedom Rights and reach agreement on the following measures:

   (a) regionalize subregional services by creating four sectors in the intra-surbegional network, each assigned for specific areas of service.

   Northern Sector, comprising the Bangui-N'djamena route with Bangui as the main centre;

   Western Sector, centred around the Douala-Libreville route, including Malabo and Sao-Tome, with Douala as main centre and Libreville as secondary centre.

   Southern Sector, comprising the Brazzaville-Kinshasa-Luanda Route, with Brazzaville-kinshasa as main centre, these two towns being linked by a multi-modal river - air system (service accross the Congo-Zaire River backed by air taxi services)

   Eastern Sector, centered around the Bujumbura-Kigali route and comprising the entire Great Lakes region, with Bujumbura as main

centre.

(b) Provide services within the subregion, on interpolar routes where if the need arises, joint or pool operations should be envisaged so as to guarantee at least three flights a week to each sector. Three flights weekly are the very minimum an airline could set as its objective to operate an effective intra-subregional network.

(c) Provide air services required with each sector, operating through the main centres or if necessary through the subsidiary centres and make every effort to improve existing services.

9. Consequently, draw-up the time schedules and necessary connections, with a view to offering regular services between pairs of towns in the subregion within at most 24 hours.

10. Introduce promotional fares in order to develop air services that would be of interest to the surbegion and at the same time support the efforts to develop tourism within the States.

11. Encourage freight transport within the subregion as well as towards other African subregions and foreign traditional destinations, particularly by creating, if necessary, subregional cargo airlines.

Medium term recommendations

12. Undertake joint creation of new services with a view to providing access to landlocked towns with the worst services, such as Sao-Tome, Kigali and N'djamena.

13. Promote, as soon as possible and in conformity with the development of traffic:

(a) new direct intersector routes which are yet inexistent, such as between Bujumbura and Kigali on the one hand and between Bujumbura and Bangui on the other hand;

(b) new inter-subregional services, for example between Bangui and Khartoum or between Bangui and Addis Ababa.

14. Create entry or exist ports through which the international service of the surbegion would be operated and would thus be linked with the intra-subregional service.

15. Create at subregional level, a joint body for coordinating and planning the entire air services network. The main role of this body would involve getting its member companies to ensure a coherent, coordinated and most economical subregional air transport

service, not only in the operation of its services, but also in the acquisition of equipment. Generally, such a body could promote and better facilitate genuine cooperation among airlines.

Long term recommendations

16. Collaborate with States in the surbegion to create and promote a multinational airline that would provide both passenger and freight services.

C. Recommendations to Regional and International Organizations

211. 1. Regional and International Organizations should not only pursue their activities, but also provide support and assistance to subregional State and Airline Companies, with a view to implementing the recommendations made in this study.

2. The CEPGL, in collaboration with the ECA, should intensify its efforts so that the three projects aimed at establishing aeronautical coopeation among its member States, (namely: creation of the TMA of the Great-Lakes; adoption of a trilateral air transport agreement and creation of a multinational cargo airline) could be executed as soon as possible.

3. The ECCAS in consultation with the CEPGL and UDEAC should encourage the creation of a subregional conference for Consultationa and Coordination among civil avaiation administrations and airlines.

4. Technical bodies such as ASECNA, should also put their expertise and technical advisory services at the disposal of interested States and subregional organizations.

(iv) Maritime/Ports

Port Development

212. The Central African subregion[3/] has eight sea ports, the two most important of which are Douala in Cameroon and Pointe-Noire in the Congo, which are briefly described below:

- Douala Port with a quay totalling 2420 m in length, 61,000 m^2 warehouse space, 66,000 m^2 open storage area, an area for extended storage known as the UDEAC Zone as well as a relatively good road network of approximately 1493 to 1808 km (930 km of railways) linking it with the interior. This port handles part of the sea trade for Chad and Central African Republic (CAR).

N.B. 3/ Cameroon, Congo, Zaire, Gabon, Equatorial Guinea, Sao-Tome and Principe, etc.

- The port of Point-Noire has ten hard quay berths with a total length of 2791 m, warehouses and sheds covering an area of 97,075 m^2 (31,800 m^2 used as a duty-free zone for transit traffic and 65,266 m^2 as a zone for extended storage), 295,969 m^2 of paved open storage area, various types of equipment and transport links with the interior through the 2,910 km transequatorial (road, river and rail). This port serves as a transit point for a major part of the external trade of Chad, the CAR and Gabon.

213. The performance of these eight ports whose total quay length is approximately 8,182 m, is generally satisfatory within the standards observed in other parts of the world:

(a) The productivity of the port labour force varies between 8 and 15 tons of general cargo per hour per gang; as compared with approximately 20 T/h/gang in under-developed countries of Asia and America and 30T/h/gang in developed countries.

214. This low rate of productivity is due to several factors such as:

(i) the outdated condition and unsuitability of the existing port equipment. It should be noted that some of the equipment remain out of order for prolonged periods owing to lack of spare parts and regular maintenance. This explains the provisions made in the programme, especially in Cameroon and Zaire:

- the VI Economic and Social Development Plan in Cameroon makes provision for the acquisition of:

  . two gantry cranes, each of 40 ton capacity;
  . handling equipment for the container depot;
  . equipment for handling multi-purpose vessels and cargo at the general cargo berths;

- In Zaire, the 1986-1991 plan makes provision for equipment such as:

  . Modern port handling equipment adapted to the traffic requirements

  . tugs and utility cargo handling equipment...etc.

(ii) inadequate training for the port labour force;

(iii) ineffective port management.

(b) Most port administrations in this subregion are faced with a rather precarious financial situation mainly due to:

- high costs involved in the repayment of loans contracted to finance infrastructure and superstructure, including port equipment;

- sometimes, ineffectiveness of the tariff strategy adopted; it should be noted that two ports in the subregion apply port dues policies which are clearly not designed to develop port traffic, but are rather more suited to the need for financial equilibrium within the entity (transport administration or equivalent body) in which the Ports Authority is integrated;

- ineffective marketing and port management policies.

(c) These ports generally have inadequate handling capacities:

. The dimension of the approach channel varies between 5.8 m and 10.10 m so that only vessels with a draught of between 7 m and 9.50 m can operate there. Consequently one of the ports (Douala) intends to increase the dimension of its approach channel from 5.8 m to 7.5 m.

(iv) General cargo berths usually have reasonable occupancy rates (approximately 59%), which is close to the average rate of 78 per cent. This is an indication of the fact that these berths are utilised to their maximum economic capacity and has given rise to the need to construct new general cargo berths in order to meet the increasing requirements of the relevant traffic. To this end, projects envisaged include:

- construction of a container depot in Pointe-Noire port; construction of a pulp terminal; extension of the timber yard; construction of a fish berth;

- construction of a timber yard at Matadi Port (Zaire) completely separated from the general cargo berths; added to this, the construction of the container berth should be completed;

- construction of a cargo berth at Banana, as well as a container terminal;

- finally, construction of a timber yard at Boma.

215. These are the activities envisaged in the 1986-1991 five year development plan, with a view to developing the relevant capacities of Zairean ports, despite the fact that the average occupancy rate of the general cargo, berths is only approximately 51 per cent.

Development of the merchant shipping fleet

216. In 1986, the Central African subregion's merchant fleet was estimated at 368,579 DWT, which is approximately 0.058 per cent of the world total. However, her contribution to the objective of 20 per cent of the world

tonnage assigned to the Third World within the context of the third United Nations Development Decade, ought to be 0.17 per cent 4/ of this tonnage, or 1,086,441 DWT in 1986.

217. From the preceeding details, it is evident, that the development of shipping in the subregion is grossly lagging in relation to the relevant objective of the current United Nations Development Decade (1981-1990); and it is highly improbable that the situation could be remedied between 1987 and 1990. In fact during the years 1980, 1981, 1982, 1984 and 1985, the subregion's merchant shipping activities represented 0.054 per cent, 0.051 per cent, 0.05 per cent, 0.059 per cent and 0.06 per cent respectively of the world tonnage, which shows an average of 0.055 per cent of world merchant shipping during the period 1980 to 1986 (1983 not included).

218. It is to be hoped that the development programme (ending in 1990) for Cameroon shipping lines, will significantly contribute to remedy this state of underdevelopment that has been observed. This programme in fact, has provisions for the acquisition of the following vessels by CAMSHIP (Cameroon Shipping Company):

(a) one, followed by several bulk vessels for timber with effect from 1990, ranging in capacity from 20,000 to 35,000 DWT. This programme is intended to cater mainly for the Douala cement works and the proposed new cement works at Limbe. The internal rate of return of the investment is estimated at 25 per cent according to a study on the Cameroon Transport Plan by Louis Berger International.

(b) Two RO/RO container vessels, each of 20,000 DWT, partly on account of the rapid growth in unitarized traffic in Cameroon (850,000T in 1985 and 1,200,000T estimated for 1990) and partly on account of the moderate rate of participation (estimated at 21 per cent to 23 per cent between 1990 and 2000) of CAMSHIP in traffic from Europe on the ATLANTIC and the MEDITERRANEAN routes. Although these two vessels will replace the company's two outdated general cargo vessels, they will nevertheless, increase its capacity and income making ability.

(c) A 60,000 to 90,000 DWT oil tanker (second hand) to carry Cameroon crude oil to the refinery and also to neighbouring markets.

Organization of Shippers

219. The three countries visited by an ECA mission (Congo, Zaire and Cameroon) each has a National Shippers Council, although in the Congo,

4/ $\frac{20}{100} \times \frac{0.85}{100} = \frac{0.17}{100}$ or 0.85 per cent is the 1982 ratio of the subregion's maritime trade (21,739,000 tons) to that of the Third World (2,551,050,000 tons).

the functions of this body have been entrusted to the National Shipping Administration. National Shippers Councils also exist in Gabon, Chad and the Central African Republic. These bodies, which fortunately help counteract the often adverse influences of shipping cartel operating in this region, have appropriate resources to protect shipper's interests, (importers and exporters) due to:

- the excellent cooperation and efficiency within the surbegional freight rate negotiating committee, which makes it possible for the National Shippers Councils to regulate increases in freight rates;

- the creation of mechanisms for monitoring cargo sharing, which enables the Shippers Councils to satisfactorily ensure strict adherence to traffic rights especially for the benefit of national shipping lines in the West and Central African subregion.

220. It is recommended that these Shippers Councils be granted the means to function more effectively so that eventually, a subregional Shippers Council could become operational.

The degree of organization of National Shipping Companies

221. Two of the three countries visited (Congo and Cameroon) have shipping administrative bodies under which all matters pertaining to the development and implementation of national shipping policies are centralized. Gabon also has a General Shipping Administration, which unlike those in Cameroon and Gongo, is entirely under the jurisdiction of a specially created Ministry dealing exclusively with maritime transport matters.

222. All these Shipping Services are provided with resources which are relatively adequate for them to function effectively. Nevertheless they could still be improved in order to reinforce their performance.

Maritime Legislation

223. Cameroon, Congo, Zaire and Gabon operate under outdated maritime legislations. In this regard, measures already initiated to ensure the updating and harmonization of these legislations, should be pursued and intensified to prevent a complete halt in the dual effort of reactivating national maritime policies one one hand, and that of developing subregional maritime cooperation on the other hand.

Maritime Training

224. Maritime training activities in the three countries visited are primarily aimed at providing staff to fill vacancies in the following areas:

- sea-going personnel: deck officers, mecahnical engineers, radio engineers;

- the shipping company's shore personnel;

- personnel required for the smooth functioning of the Shipping Lines: Administrators, officers etc..

225. It should be noted that in some of the countries visited, if not all, efforts to organize intensive training are likely to lead to a plethora of officers, if appropriate measures are not taken, except an unexpected boost is given to programmes aimed at developing national shipping fleets.

Countries in the Central African surbegion which were not visited and not sufficiently evaluated

226. These are Gabon, Sao-Tome and Principe, Equatorial Guinea . etc. In the absence of relevant, up-to-date information on these countries, it is recommended that they should be visited, so that an in-depth evaluation of their maritime and ports activities could be undertaken. Only then can appropriate recommendations be made in respect of these countries.

Landlocke countries (Chad and CAR)

227. These countries' interest in maritime activities should be considered along with the maritime policies of transiting countries. Such policies can be developed after due consultations among interested parties,by means of mechanisms to be determined by the parties concerned.

Maritime Cooperation in West and Central Africa

228. Subregional maritime cooperation among twenty-five West and Central African States (from Mauritania to Angola) got off to a good start in May 1975 with the adoption (on May 7, 1975) of the Abidjan Charter on maritime transport, by the Ministers responsible for shipping in the two subregions.

Priority areas for maritime cooperation approved by the countries in the subregion

229. The Abidjan Charter specifically indicated priority areas for surbegional maritime cooperation as follows:

A. Maritime economy

(a) establish a permanent structure for consultation on maritime transport, especially by institutionalizing the Ministerial Conference

(b) create Shippers Councils or equivalent bodies in countries where they do not exist so that they become functional before the end of 1975;

(c) group all the various councils together within one main structure for cooperation. To this end the Conference appointed an ad hoc committee mandated to consider the structure and functions of this grouping;

(d) create facilitation committees (National and Subregional Commission) with a view to simplifying administrative procedures in international maritime traffic;

(e) envisage effective participation of States in the activities of auxiliary services to maritime transport (transit, lighterage, handling ...etc.);

(f) create structures for freight booking and consolidation in order to promote shipping companies in the subregion. To this end, it is recommended that freight transactions be gradually converted from CIF to FOB in respect of imports and from FOB to CIF in respect of exports;

(g) create national and regional insurance companies to provide better coverage and protection for the interests of Shippers and Shipping Companies in the region.

B. Establishment of Maritime Shipping Companies

(h) combine efforts to ensure that maritime transport from or to member countries is operated under the most advantageous conditions for their economes;

(i) create and develop their navy;

(j) coordinate the activities of national shipping companies in order to make maximum use of the transport facilities, through concerted organization of lines and agencies and eventually lead to a pool arrangement;

(k) urge African States which depend on collaboration from foreign countries to create their national companies with majority shares holdings;

(l) create an African Maritime Conference for West and Central Africa;

(m) adopt necessary measures to rapidly Africanize positions of representatives (in Africa) of foreign shipping conferences plying in the region;

(n) appeal to African finance institutions and other international bodies to obtain favourable conditions for the acquisition of vessels required to create and develop their fleet, in view of the stringent measures on export credits adopted by OECD States, in their resolution C4 7488 of 18 July 1974;

(o) undertake a research study on the feasibility of creating regional Shipping Companies.

C. Ports

(p) - install equipment indispensable for the smooth flow of traffic;

- organize the exploitation of ports facilities, with a view to creating appropriate management structures, through rational and economic use of the port labour force;

- grant increasing autonomy to Ports Authorities to enable them to improve their effectiveness.

(q) encourage the creation of an Association of Port Management Authorities in West and Central Africa as one of the structure for cooperation and exchange of information;

(r) undertake studies on long term ports development in order to facilitate access to bulk cargo and container vessels.

D. Landlocked countries

(s) institutionalize the participation of landlocked countries in the management of ports on which they are dpendent and encourage them to take shares in the Shipping Companies of coastal countries;

(t) ensure that with the approval of the coastal countries, preferential tariffs are applied to goods originating in or being dispatched to landlocked countries.

E. Research and training

(u) create and develop with the assistance of the United Nations Specialized Agencies, regional research and documentation centres on maritime transport, with a view to creating within the shortest possible time, regional institutions for training both sea going and shore personnel.

Ongoing follow-up activities

230. In order to monitor the gradual implementation of the priority programmes thus defined, a series of complementary follow-up measures have been initiated by interested Ministers during their various sessions. These include:

(a) creation of a Permanent Secretariat of the Conference of Ministers;

(b) implementation of agreements to regionalize the maritime training centres of Abidjan and Accra;

(c) resolution on the creation of national and subregional Shippers Councils, with the existing regional negotiating committee serving as the nucleus of a subregion Shippers Council. The Permanent Secretariat of this subregional Shippers Councils was recently established (April-May 1986) in Douala (Cameroon);

(d) creation of the subregional Union of National Shipping Companies;

All these unions, (including the Association of Port Management Authorities in West and Central Africa) are sub-structures of the Ministerial Conference on maritime transport.

(e) on ongoing study aimed at updating and harmonizing national maritime legislations, on a subregional basis;

(f) a completed study and its recommendations, which are in the process of implementation, on measures to control maritime transport costs in the West and Central African subregion;

(g) a completed study on the creation of a multinational coastal shipping line in West and Central Africa. Discussions are already underway to reach a final decision on the follow-up measures;

(h) cooperation among Shipping Companies in the subregion is developing gradually through:

- opening of joint Agencies in European and African ports: specific examples of this strategy are the Shipping Lines of Cote d'Ivoire, Togo and Benin. This practice contributes to significant reductions in Agency fees;

- efforts already udnertaken, to harmonize various methods for monitoring cargo sharing, which is already in operation in the subregion: a priori and a posteriori monitoring (the latter being the shipping industry system).

(i) adequate cooperation among national Shippers Councils; this is maintained through the subregional negotiating committee, whose activities in moderating the spiralling freight rate levels are more than promising, thereby resulting in substantial foreign exchange savings for the subregion. Furthermore, the significant progress made in the creation of National Shippers Councils should be noted: almost a total of fifteen at the moment.

Summary and Conclusion

231. The study on the harmonization and coordination of the various transport modes in the Central AFrican subregion as well as the other three subregions was designed to provide basic information on which a harmonized, coordinated and integrated transport system could be established in the subregion. The individual modal studies have dealt with the infrastructure, equipment and facilities and their conditions; traffic volume, costs/charges and direction of flows; as well as with infrastructure and equipment capacities and their utilization.

232. Detailed information on most of the above parameters for the Central African subregion is scanty. The first observation in effect is that transport data in the surbegion is grossly lacking and any major effort at harmonizing and coordinating services must logically start with the establishment of a data base.

233. The overall observation of all the transport system is that, with the exception of maritime transport which has been effectively merged with the West African subregion, the other transport modes are extremely national in scope even where there is clear need for subregional cooperation such as in road transport. Indeed, while some transport cooperation provisions exist in some subregional cooperation instruments (i.e. ECCAS, UDEAC), this have not been formalized into subregional policy or translated into actual harmonized and coordinated operations. Comparatively, the surbegion not only has the least transport infrastructure which happens to be in poor conditions, but also the least subregional co-operation arrangements.

234. Part of the fault could be attributed to the homongeneity of the subregion and the consequent small volume of trade among member States, yet given the current drive for economic cooperation in Africa, it is imperative that the policy instruments for surbegional harmonization and coordination of transport operations should at least be established, pending actual operations when and if infrastructures have been completed. It should be emphasized that even in their present conditions, a reasonable volume of traffic can be moved among coutnries of the surbegion, given such a policy framework and facilitation of movement and procedures.

235. With respect to the individual modes:

- road transport offers better prospects for subregional harmonization and coordination because of its wide-spread use in each member state, the existence and actual operations of some inter-state link roads, and the fact that landlocked CAR and Chad depend largely on this mode;

- railways offer the least prospects for surbegional harmonization/coordination, due principally to their general direction, high cost of extention and low rates of return coupled with lack of funds and technical incompatability;

- air transport has average prospects, but these would largely depend on major policy, reorganization and operations activities which must be instituted and adhered to at the subregional level.

- maritime transport has been effectively merged with that of the West Afrian subregion and given its well established policy/legal institutions and current and ongoing activities, a lot has already been accomplished and much more could be acomplished in harmonization and coordination at the expanded surbegional level.

- harmonization and coordination of inland water transport in the subregion would largely remain the concern of Zaire, Congo and CAR, since only these countries are transversed by one river.

236. By their very nature, different transport modes can be coordinated in terms of schedules and inter-face facilities, while harmonization is strictly applicable to individual modes and involves standardization of infrastructures, equipment and other technical and operational variable specific to the mode. A summary of the prospects of harmonization within the various transport modes in the surbegion is given above. With regards to coordination between and among the various modes in the subregion, the situation appears even less encouraging.

237. A combination of railways, roads and inland water transport is frequently used in most long-distant distribution services within the region, yet it is not evident that services are coordinated between/among the modes. The general practice is that at each modal terminal, freight and passengers are discharged and arrangements for the onward journey by another mode are made. In the case of freight, multiple storage, handling and documentation are usually necessitated.

238. The major, particularly transit ports in the subregion are the critical inter-face points between maritime and various surface transport modes, and invariably freight is discharged from vessels, handled and stored at the ports and eventually rehandled and loaded onto other modes.

239. Thus, in conclusion, there is apparently little or no coordination among the various transport modes in the subregion with the result that overall transport costs are higher than what would prevail if there were cooperation and coordination between and among the various transport modes.

240. Coordination among the various transport modes is not only the least expensive but most cost-effective transport activity which can be implemented in the subregion. Basically, it requires minimal investments on compatable

inter-face facilities, coordination of schedules, use of simplified common documents and the streamlining of procedures. The ultimate aim of coordination in the subregion should be the multi-modal operation of transport services from port to inland destinations without the multiplicity of handling, documentation and procedures as currently exist.

241. In order to achieve efficient and effective coordination among the modes, the subregion should formulate policies and establish procedures which would enable freight to be discharged from vessels directly onto road or railway transport equipment for immediate departure to inland destinations, at which other procedures can be carried out.